

## Conference Abstract

# The Importance of Storing and Delivering Geochemical Data for Earth Science Collections

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## Abstract

The composition and state of the earth's lithosphere through time has had profound effect on past and present biodiversity and will continue to do so into the future. Environments ranging from deep sea hydrothermal vents to active continental volcanic centres provide a wide range of ecosystems that have shaped the planet we know. Catastrophic events relating to movements of the lithosphere and events deep in the mantle have also caused major biodiversity changes such as mass extinctions. Our museum collections contain rock and fossil specimens collected from many of these environments and suites of samples specifically collected in order to better understand the evolution of our planet. Requests to carry out geochemical investigations on these samples are common and a large amount of data is generated as a result. Currently there are no natural history collections management systems tailored towards recording and delivering these datasets and the result is that the data is recorded in various distributed systems and cannot be easily assessed and used. It is important for these analyses on our museum collections to be delivered in a standard way so that the importance and relevance of these collections can be demonstrated and large datasets generated to answer big questions regarding the geological evolution of our planet. Examples of these questions include "how and when will volcanic eruptions will occur?" and "what has been the role of volcanism during mass extinction?". Other geochemical studies such as oxygen isotope studies have been carried out on museum collections in order to investigate past oceanic environments and the effects of changes in climate on our oceans. Geochemical data aggregators such as [Earth](#)

Chem have made great strides in working towards international data standards and providing portals for delivering this type of data. As we progress towards one European Collection (DiSSCo) it is vital that we recognise the importance of these natural history collections related geochemical datasets and include delivering them on the general roadmap.

## **Keywords**

geochemistry, portals, natural history collections

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